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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,873	01/07/2002	Darryl D. Amick	MOF 304	4960

7590 05/02/2005

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EXAMINER	
JENKINS, DANIEL J	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/041,873	AMICK, DARRYL D.	
	Examiner	Art Unit	
	Daniel J. Jenkins	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *24 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,20-22,27-31,34-58 and 63-76* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17,20-22,27-31,34-58 and 63-76* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The Examiner has carefully considered Applicant's Response of 1/24/05. At this time, the Examiner makes a new rejection which is accordingly not made final. The Examiner notes that he had incorrectly determined the priority date as the filing date without acknowledgement of priority, and withdraws the double patenting rejections since the pending application has the earliest priority.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-17, 20-22, 27-31, 34-58 and 63-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mravic et al. '187 in view of West et al. and further in view of WO'878.

Mravic et al. '187 discloses the invention substantially as claimed. Mravic et al. '187 discloses a frangible projectile comprising:

a W or ferrotungsten component; and

a polymer binder.

Mravic et al. '187 discloses wherein the polymer binder is selected from a group of thermosetting resin (col. 5, lines 47-49).

Mravic et al. '187 discloses in Examples (CODE) 1 and 2, wherein the polymer binder is in amounts of 2.5% and 1.6%, respectively. The Examiner notes that the desired density of the formed projectile would direct one of ordinary skill to small amounts of polymer binder in the projectile.

Mravic et al. further disloses that additional metal powders of iron or zinc as filler (col. 2, lines 30-32), and provides an example of adding 0, 15 and 30% by weight filler material. So, Mravic et al. '187 differs from the instant invention by the addition of less than 30% of a metal component containing tin up to 50%.

Mravic et al. '187 lists tin, zinc, iron and copper as matrix metals, but does not suggest adding these materials to the polymer matrix embodiment (see col. 2, lines 18-29).

Mravic et al. further discloses wherein a consideration in selecting and forming the materials of the projectiles is the ability to adjust the projectile to selected density parameters.

The Examiner notes that the plastic matrix embodiments of Mravic et al. '187 range from 75-84% density of lead (col. 5, lines 62-66).

West et al. teaches that in addition to tungsten, bronze can be used in addition to tungsten, bronze containing 1 to 10 % Sn (see CDC), in the same field of polymer containing projectiles, in order to engineer the projectile to desired density and frangibility.

It would have been obvious to use a mixture of W and bronze, as taught by West et al., in the invention of Mravic et al. in order to adjust density and frangibility properties.

WO'878 teaches that tin can be used with W in the same field of endeavor as a secondary metal for the purpose of adjusting density and frangibility, thus teaching Sn as an equivalent to the bronze of West et al., allowing one or ordinary skill to substitute tin for bronze in the invention of Mravic et al. '187 in view of West.

Furthermore, Mravic et al. '187 teaches that metal powder loading can be adjusted to approximate the density of lead i.e. ballistics, see col. 3, lines 22-25. Therefore, one of ordinary skill in the art would adjust the amount of metals loading in the projectile in order to adjust the density of the projectile to approximate lead (11.4 g/cc), thus rendering the claims to higher density projectile obvious by closely approximating the claimed range.

West et al. disclose wherein a projectile is part of a ammunition comprising known cartridge components comprising firing pin, case, primer, and propellant (col. 3, lines 24-33) in the same field of endeavor for the purpose of using nonlead projectiles in range ammunition, with one of ordinary skill in the art knowing that ammunition means

cartridges of shotgun and rifle, the projectile being formed into the appropriate shape for each application, including jacketing as discussed by West et al.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use the components of West et al. with the projectile of Mravic '187 in order to form nonlead range ammunition.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Jenkins whose telephone number is 571-272-1242. The examiner can normally be reached on M-TH6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1242. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Jenkins
Primary Examiner
Art Unit 1742

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